What is claimed is:

1. A digital light processing projection system comprising:

an illuminating device having a light source outputting a light beam;

an optical-path-switching element having a plurality of micro-mirrors for receiving the light beam and reflecting the light beam under a first state and a second state, respectively;

a projection device having a projection lens for receiving the light beam reflected from the optical-path-switching element under the first state; and

a prism set arranged between the illuminating device, the optical-path-switching element, and the projection device, having a plurality of prisms in which an air gap exists between any two adjacent prisms;

wherein, the light beam output from the illuminating device directly passes through the prisms and air gaps of the prism set before being received by the optical-path-switching element; the light beam reflected from the optical-path-switching element is totally reflected at an interface between one of the prisms and one of the air gaps next to before being received by the projection lens under the first state; and the light beam reflected from the optical-path-switching element is totally reflected back and forth within one of the prisms being adjacent to the optical-path-switching element under the second state.

2. The digital light processing projection system as described in claim 1, wherein the prism being adjacent to the optical-path-switching element is provided with light absorbing material in the surrounds.

3. The digital light processing projection system as described in claim 1, wherein a distance between the prism set and the projection lens is zero.

4. The digital light processing projection system as described in claim 1, wherein the illuminating device further includes a light guide and a relay lens.

5. The digital light processing projection system as described in claim 1, wherein the projection device is further provided with an optical stop.

6. The digital light processing projection system as described in claim 1, wherein the prism set has a first prism, a second prism, a third prism, a first air gap existing between the first prism and the second prism, and a second air gap existing between the second prism and the third prism; the light beam output from the illuminating device passes through the first prism, the first air gap and the second prism in sequence before being received by the optical-path-switching element; the light beam reflected from the optical-path-switching path is totally reflected at an interface between the second prism and the first air gap and then passes through the third prism before being received by the projection lens under the first state; and the light beam reflected from the optical-path-switching element is totally internal reflected back and forth within the second prism under the second state.

7. The digital light processing projection system as described in claim 6,

wherein the second prism is provided with light absorbing material in the surrounds.

8. The digital light processing projection system as described in claim 6, wherein a distance between the third prism and the projection lens is zero.

9. The digital light processing projection system as described in claim 6, wherein the illuminating device further has a light guide and a relay lens.

10. The digital light processing projection system as described in claim 6, wherein the projection device is provided with an optical stop.

11. The digital light processing projection system as described in claim 1, wherein the prism set has a first prism, a second prism, a third prism, a first air gap existing between the first prism and the second prism, and a second air gap existing between the second prism and the third prism; the light beam output from the illuminating device passes through the first prism, the first air gap, the second prism, the second air gap and the third prism in sequence; the light beam output from the optical-path-switching element is totally reflected at an interface between the second prism and the first air gap before being received by the projection lens under the first state; and the light beam reflected from the optical-path-switching element is totally internal reflected back and forth within the third prism under the second state.

12. The digital light processing projection system as described in claim 11, wherein the second prism is provided with light absorbing material in the surrounds.

13. The digital light processing projection system as described in claim 11, wherein a distance between the third prism and the projection lens is zero.

14. The digital light processing projection system as described in claim 11, wherein the illuminating device further includes a light guide and a relay lens.

15. The digital light processing projection system as described in claim 11, wherein the projection device is provided with an optical stop.

16. A projection method of a digital light processing projection system, wherein the digital light processing projection system has at least an illuminating device, an optical-path-switching element, a projection device, and a prism set having a plurality of prisms and air gaps, comprising the steps of:

guiding a light beam output from the illuminating device into the prism set, and having the light beam pass through the prism set without being reflected and reach the optical-path-switching element;

reflecting the light beam reaching the optical-path-switching element back to the prism set and then having the light beam be totally reflected into the projection device under a first state;

reflecting the light beam reaching the optical-path-switching element back to the

prism set and then having the light beam be totally reflected at a interface between a first-encountered air gap and one of the prisms next to and then totally internal reflected back and forth within the prism next to the first-encountered air gap under a second state; and

absorbing the light beam being totally internal reflected back and forth within the prism next to the first-encountered air gap under the second state.

17. The projection method of a digital light processing projection system as described in claim 16 further comprising the steps of:

projecting the light beam entering the projection device under the first state into a screen.

18. The projection method of a digital light processing projection system as described in claim 16, wherein the prism set has a first prism, a second prism, a third prism, a first air gap existing between the first prism and the second prism, and a second air gap existing between the second prism and the third prism.

19. The projection method of a digital light processing projection system as described in claim 18, wherein the light beam output from the illuminating device passes through the first prism, the first air gap and the second prism in sequence when being guided into the prism set; the light beam reaching the optical-path-switching element is reflected to an interface between the first prism and the first air gap under the first state; and the light beam reaching the

optical-path-switching element is reflected to an interface between the second prism and the second air gap under the second state.

20. The projection method of a digital light processing projection system as described in claim 18, wherein the light beam output from the illuminating device passes through the first prism, the first air gap, the second prism, the second air gap and the third prism in sequence when being guided into the prism set; the light beam reaching the optical-path-switching element is reflected to an interface between the first prism and the first air gap under the first state; and the light beam reaching the optical-path-switching element is reflected to an interface between the third prism and the second air gap under the second state.